

Please cancel claims 1-45.

Please add new claims 46-111 as follows:

46. A medical system for acquiring measured data, in particular for monitoring body functions, comprising:

B4 at least one evaluation station having at least one receiver and at least one transmitter for wireless digital data transmission and receiving;

one electrode allocated to each evaluation station and capable of being attached to a patient, said electrode comprising:

at least one sensor for detecting an electric, physical, chemical or biological quantity, and converting the detected quantity into an electric signal;

a covering comprising:

at least one converter for converting the electric signal generated by said sensor into a digital value;

at least one transmitter coupled to said at least one converter for transmitting the digital data to the receiver in said evaluation station; and

at least one receiver for receiving data transmitted by the evaluation station transmitter; and

at least one error diagnosis and correction unit coupled to at least one of said electrode and evaluation station for detecting errors in the received data;

whereby the data transmitted by said evaluation station to said electrode can manipulate the data transmitted by said electrode to the evaluation station.

1947. A medical system for acquiring measured data, in particular for monitoring body functions, comprising:

B4  
at least one evaluation station having at least one receiver and at least one transmitter for wireless digital data transmission and receiving;

at least two electrodes capable of being attached to a patient, each of said electrodes comprising:

at least one sensor for detecting an electric, physical, chemical or biological quantity, and converting the detected quantity into an electric signal;

a covering comprising:

at least one converter for converting the electric signal generated by said sensor into a digital value;

at least one transmitter coupled to said at least one converter for transmitting the digital data to the receiver in said evaluation station; and

at least one receiver for receiving data transmitted by the evaluation station transmitter,

wherein data transmitted by said evaluation station to said electrode can manipulate the data transmitted by said electrode to the evaluation station.

248. The system according to claim 46, wherein the evaluation station comprises at least one decoding unit and wherein said electrode is equipped with an encoding unit.

B4  
3<sup>49</sup>. The system according to claim <sup>1</sup>46, wherein the evaluation station contains at least one encoding unit and wherein said electrode is equipped with a decoding unit.

4<sup>50</sup>. The system according to claim <sup>1</sup>46, wherein the evaluation station comprises at least one demultiplexer unit and wherein said electrode is equipped with at least one multiplexer unit.

5<sup>51</sup>. The system according to claim <sup>1</sup>46, wherein the evaluation station contains at least one multiplexer unit and wherein said electrode contains at least one demultiplexer unit.

6<sup>52</sup>. The system according to claim <sup>1</sup>46, wherein the evaluation station has at least one of a storage unit, display unit and alarm unit.

7<sup>53</sup>. The system according to claim <sup>1</sup>46, wherein the evaluation station and electrode have at least one of an electromagnetic detector and emitter, said emitter being designed as a semiconductor diode.

8<sup>54</sup>. The system according to claim <sup>1</sup>46, wherein said evaluation station further comprises a transmission control unit, said transmission control unit having a synchronization unit that synchronizes the reference frequencies, oscillator frequencies, carrier frequencies, the cycle, the phase and the time frame of the electrode.

9<sup>55</sup> / The system according to claim <sup>1</sup>/<sub>46</sub>, wherein said electrode further comprises a transmission control unit.

B4 10<sup>56</sup> / The system according to claim <sup>1</sup>/<sub>46</sub>, wherein the evaluation station further comprises a status unit, said status unit permitting the selection of the electrode to be addressed and automatically recognizing which electrode is connected and correctly connected to the body at the start of the diagnosis or monitoring.

11<sup>57</sup> / The system according to claim <sup>1</sup>/<sub>46</sub>, further comprising a control unit always adjusting the transmitting power of the signals of the electrode and the evaluation station to the minimum value required for still operating the circuit and transmitter of the electrode, and if the transmitting power required by the electrode is too high, the respective electrode no longer transmits signals to the evaluation station and receives signals transmitted by the evaluation station.

12<sup>58</sup> / The system according to claim <sup>1</sup>/<sub>46</sub>, further comprising a calibration unit connected to at least one of the evaluation station and electrode.

13<sup>59</sup> / The system according to claim <sup>1</sup>/<sub>46</sub>, wherein the evaluation station further comprises at least one of an interleaving unit and a delevaing unit and wherein the electrode has at least one of an interleaving unit and delevaing unit.

<sup>14</sup>~~60~~. The system according to claim <sup>1</sup>~~46~~, wherein said electrode is attached to the skin surface.

B# <sup>15</sup>~~61~~. The system according to claim <sup>1</sup>~~46~~, wherein said electrode has at least one electrode pin penetrating the body of a patient.

<sup>16</sup>~~62~~. The system according to claim <sup>1</sup>~~46~~, wherein said electrode has at least one of an evaluation unit and a storage unit.

<sup>20</sup>~~63~~. The system according to claim <sup>19</sup>~~47~~, wherein the evaluation station comprises at least one decoding unit and wherein each electrode is equipped with an encoding unit.

<sup>21</sup>~~64~~. The system according to claim <sup>19</sup>~~47~~, wherein the evaluation station contains at least one encoding unit and wherein each electrode is equipped with a decoding unit.

<sup>22</sup>~~65~~. The system according to claim <sup>19</sup>~~47~~, wherein the evaluation station comprises at least one demultiplexer unit and wherein said electrodes are equipped with at least one multiplexer unit.

<sup>23</sup>~~66~~. The system according to claim <sup>19</sup>~~47~~, wherein the evaluation station contains at least one multiplexer unit and wherein said electrodes contains at least one demultiplexer unit.

24<sup>67</sup>. The system according to claim <sup>19</sup>~~47~~, wherein the evaluation station has at least one of a storage unit, display unit and alarm unit.

B4 25<sup>68</sup>. The system according to claim <sup>19</sup>~~47~~, wherein the evaluation station and electrodes have at least one of an electromagnetic detector and emitter, said emitter being designed as a semiconductor diode.

26<sup>69</sup>. The system according to claim <sup>19</sup>~~47~~, wherein said evaluation station further comprises a transmission control unit, said transmission control unit having a synchronization unit that synchronizes the reference frequencies, oscillator frequencies, carrier frequencies, the cycle, the phase and the time frame of the electrodes.

27<sup>70</sup>. The system according to claim <sup>19</sup>~~47~~, wherein said electrodes further comprise a transmission control unit.

28<sup>71</sup>. The system according to claim <sup>19</sup>~~47~~, wherein the evaluation station further comprises a status unit, said status unit permitting the selection of the electrode to be addressed and automatically recognizing which electrodes are connected and correctly connected to the body at the start of the diagnosis or monitoring.

29<sup>19</sup>/<sub>72</sub>. The system according to claim <sup>19</sup>/<sub>47</sub>, further comprising a control unit always adjusting the transmitting power of the signals of the electrodes and the evaluation station to the minimum value required for still operating the circuit and transmitter of the electrodes, and if the transmitting power required by the electrodes is too high the respective electrode no longer transmits signals to the evaluation station and receives signals transmitted by the evaluation station.

30<sup>19</sup>/<sub>73</sub>. The system according to claim <sup>19</sup>/<sub>47</sub>, further comprising a calibration unit connected to at least one of the evaluation station and electrodes.

31<sup>19</sup>/<sub>74</sub>. The system according to claim <sup>19</sup>/<sub>47</sub>, wherein the evaluation station further comprises at least one of an interleaving unit and a delevaing unit and wherein the electrodes have at least one of an interleaving unit and delevaing unit.

32<sup>19</sup>/<sub>75</sub>. The system according to claim <sup>19</sup>/<sub>47</sub>, wherein said electrodes are attached to the skin surface.

33<sup>19</sup>/<sub>76</sub>. The system according to claim <sup>19</sup>/<sub>47</sub>, wherein each electrode has an electrode pin penetrating the body of a patient.

34<sup>19</sup>/<sub>77</sub>. The system according to claim <sup>19</sup>/<sub>47</sub>, wherein each electrode has an evaluation unit and a storage unit.

17~~78~~. A medical system according to claim ~~46~~, wherein the data transmitted by the evaluation station to said electrode can control the data transmitted by said electrode to the evaluation station.

84 35~~79~~. A medical system according to claim ~~47~~<sup>19</sup>, wherein the data transmitted by the evaluation station to said electrode can control the data transmitted by said electrode to the evaluation station.

36~~80~~. A medical system for acquiring measured data, in particular for monitoring body functions, comprising:

at least one evaluation station having at least one receiver and at least one transmitter for wireless digital data transmission and receiving;

one electrode allocated to each evaluation station and capable of being attached to a patient, said electrode comprising:

at least one sensor for detecting an electric, physical, chemical or biological quantity, and converting the detected quantity into an electric signal;

a covering comprising:

at least one converter for converting the electric signal generated by said sensor into a digital value;

at least one transmitter coupled to said at least one converter for transmitting the digital data to the receiver in said evaluation station; and

at least one receiver for receiving data transmitted by the evaluation station transmitter; and



at least one error diagnosis and correction unit coupled to at least one of said electrode and evaluation station for detecting errors in the received data;

34 whereby the data transmitted by said evaluation station to said electrode can control the data transmitted by said electrode to the evaluation station.

5/  
81. A medical system for acquiring measured data, in particular for monitoring body functions, comprising:

at least one evaluation station having at least one receiver and at least one transmitter for wireless digital data transmission and receiving;

at least two electrodes capable of being attached to a patient, each of said electrodes comprising:

at least one sensor for detecting an electric, physical, chemical or biological quantity, and converting the detected quantity into an electric signal;

a covering comprising:

at least one converter for converting the electric signal generated by said sensor into a digital value;

at least one transmitter coupled to said at least one converter for transmitting the digital data to the receiver in said evaluation station; and

B4 at least one receiver for receiving data transmitted by the evaluation station transmitter,

whereby the data transmitted by said evaluation station to said electrode can control the data transmitted by said electrode to the evaluation station.

37  
82. The system according to claim ~~80~~<sup>36</sup>, wherein the evaluation station comprises at least one decoding unit and wherein said electrode is equipped with an encoding unit.

18  
83. The system according to claim ~~46~~<sup>1</sup>, wherein the evaluation station contains at least one encoding unit and wherein said electrode is equipped with a decoding unit.

28  
84. The system according to claim ~~80~~<sup>36</sup>, wherein the evaluation station comprises at least one demultiplexer unit and wherein said electrode is equipped with at least one multiplexer unit.

39  
85. The system according to claim ~~80~~<sup>36</sup>, wherein the evaluation station contains at least one multiplexer unit and wherein said electrode contains at least one demultiplexer unit.

<sup>40</sup>  
~~86~~. The system according to claim <sup>34</sup>~~80~~, wherein the evaluation station has at least one of a storage unit, display unit and alarm unit.

B4 <sup>41</sup>  
~~87~~. The system according to claim <sup>36</sup>~~80~~, wherein the evaluation station and electrode have at least one of an electromagnetic detector and emitter, said emitter being designed as a semiconductor diode.

<sup>42</sup>  
~~88~~. The system according to claim <sup>36</sup>~~80~~, wherein said evaluation station further comprises a transmission control unit, said transmission control unit having a synchronization unit that synchronizes the reference frequencies, oscillator frequencies, carrier frequencies, the cycle, the phase and the time frame of the electrode.

<sup>43</sup>  
~~89~~. The system according to claim <sup>34</sup>~~80~~, wherein said electrode further comprises a transmission control unit.

<sup>44</sup>  
~~90~~. The system according to claim <sup>36</sup>~~80~~, wherein the evaluation station further comprises a status unit, said status unit permitting the selection of the electrode to be addressed and automatically recognizing which electrode is connected and correctly connected to the body at the start of the diagnosis or monitoring.

45/ 91. The system according to claim <sup>36</sup>80, further comprising a control unit always adjusting the transmitting power of the signals of the electrode and the evaluation station to the minimum value required for still operating the circuit and transmitter of the electrode, and if the transmitting power required by the electrode is too high, the respective electrode no longer transmits signals to the evaluation station and receives signals transmitted by the evaluation station.

46/ 92. The system according to claim <sup>36</sup>80, further comprising a calibration unit connected to at least one of the evaluation station and electrode.

47/ 93. The system according to claim <sup>36</sup>80, wherein the evaluation station further comprises at least one of an interleaving unit and a deleving unit and wherein the electrode has at least one of an interleaving unit and deleving unit.

48/ 94. The system according to claim <sup>36</sup>80, wherein said electrode is attached to the skin surface.

49/ 95. The system according to claim <sup>36</sup>80, wherein said electrode has at least one electrode pin penetrating the body of a patient.

50/ 96. The system according to claim <sup>36</sup>80, wherein said electrode has at least one of an evaluation unit and a storage unit.

~~52~~  
97. The system according to claim ~~51~~  
81, wherein the evaluation station comprises at least one decoding unit and wherein each electrode is equipped with an encoding unit.

B4  
~~53~~  
98. The system according to claim ~~51~~  
81, wherein the evaluation station contains at least one encoding unit and wherein each electrode is equipped with a decoding unit.

~~54~~  
99. The system according to claim ~~51~~  
81, wherein the evaluation station comprises at least one demultiplexer unit and wherein said electrodes are equipped with at least one multiplexer unit.

~~55~~  
100. The system according to claim ~~51~~  
81, wherein the evaluation station contains at least one multiplexer unit and wherein said electrodes contains at least one demultiplexer unit.

~~56~~  
101. The system according to claim ~~51~~  
81, wherein the evaluation station has at least one of a storage unit, display unit and alarm unit.

~~57~~  
102. The system according to claim ~~51~~  
81, wherein the evaluation station and electrodes have at least one of an electromagnetic detector and emitter, said emitter being designed as a semiconductor diode.

~~58~~  
103. The system according to claim ~~51~~  
81, wherein said evaluation station further comprises a transmission control unit, said

transmission control unit having a synchronization unit that synchronizes the reference frequencies, oscillator frequencies, carrier frequencies, the cycle, the phase and the time frame of the electrodes.

B4 <sup>59</sup>~~104~~. The system according to claim <sup>51</sup>~~81~~, wherein said electrodes further comprise a transmission control unit.

<sup>60</sup>~~105~~. The system according to claim <sup>51</sup>~~81~~, wherein the evaluation station further comprises a status unit, said status unit permitting the selection of the electrode to be addressed and automatically recognizing which electrodes are connected and correctly connected to the body at the start of the diagnosis or monitoring.

<sup>61</sup>~~106~~. The system according to claim <sup>51</sup>~~81~~, further comprising a control unit always adjusting the transmitting power of the signals of the electrodes and the evaluation station to the minimum value required for still operating the circuit and transmitter of the electrodes, and if the transmitting power required by the electrodes is too high the respective electrode no longer transmits signals to the evaluation station and receives signals transmitted by the evaluation station.

<sup>62</sup>~~107~~. The system according to claim <sup>51</sup>~~81~~, further comprising a calibration unit connected to at least one of the evaluation station and electrodes.

<sup>63</sup>~~108~~. The system according to claim <sup>51</sup>~~81~~, wherein the evaluation station further comprises at least one of an interleaving unit and

a delevaing unit and wherein the electrodes have at least one of an interleaving unit and delevaing unit.

B4

<sup>64</sup>  
~~109~~. The system according to claim <sup>51</sup>~~81~~, wherein said electrodes are attached to the skin surface.

<sup>65</sup>  
~~110~~. The system according to claim <sup>51</sup>~~81~~, wherein each electrode has an electrode pin penetrating the body of a patient.

<sup>66</sup>  
~~111~~. The system according to claim <sup>51</sup>~~81~~, wherein each electrode has an evaluation unit and a storage unit.

#### REMARKS

By this amendment, Applicants have amended the specification as required during the prosecution of the parent application and have added new claims 46-111, which correspond to original claims 1-45. Independent claims 80 and 81 are similar to claims 46 and except that the word "control" replaces the word "manipulate" in the last paragraph of claims 80 and 81. Claims 82-111 have been added to depend from new claims 80 and 81. These new dependent claims are identical in substance to claims 48-77.